

macdonald **FARM** *journal*



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Canada's Centennial P. 11

Small Farm Problem P. 6

July, 1964



THE MACDONALD LASSIE

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COLLEGE PAGE

OUR COVER: Cattle grazing at the Lennoxville Experimental Farm — National Film Board Photo.



INSIDE

THE EDITOR'S COLUMN

Information for the Farmer

WHERE DO YOU get the latest agricultural information to assist you in your business of farming? Many farmers expect to find it in the mailbox. For years information has been given this way. It's now time that farmers ask for what they want. They need recent facts on all phases of agriculture. There are many who say, "we don't have time to read it anyway". Then take time; it will pay dividends because we are living in a time of rapid change. People employed in agriculture must alter their production methods. There is a lot of information available. Farm people must read, listen, watch, select and digest — It then will be time to fit the pieces together and make a decision, to do something or nothing.

The preparation of materials is difficult. Technical information must be re-written and presented in a usable form. The educational levels of people using the information differ considerably. What interests one group, is of little value to another. Specialized farmers want specific information and more details.

Once the material has been gathered it must then be decided how it can be best made available. In a recent study conducted in the United States, people were asked how they first heard about practices they finally adopted. The replies were:

Individual Contact	27.2%
Group Meetings	32.3%
Mass Media	20.8%
Indirect Influence	19.7%

This indicates that all methods of communication are valuable and must be used if ideas are to be adopted.

Most information is readily available. The farm press, radio and television all supply important facts. The Information Division of the Federal and Provincial Departments of Agriculture supplies pamphlets and leaflets on request. Agronomes and other professional agricultural workers have information. Agricultural Colleges are continually performing research and answering questions. Industrial companies, such as feed suppliers and machinery manufacturers supply useful details about their products. The problem is to save these facts until they are needed. Newspapers are discarded and details of radio and television programs are forgotten.

In some cases certain information may not be available. Sometimes it is outdated. Some information is biased. Maybe we've come to the time when printing pamphlets is not the best way to supply facts. They may be outdated and we may keep them around too long. There are organizations in the United States and Canada that supply information on colour-coded sheets for easy filing in a loose leaf folder. If a page becomes obsolete or new facts are available, new pages are issued.

Farmers would have to pay for this kind of a service as they already do for farm newspapers. It is now becoming common practice to pay for glossy pamphlets and farm management services. The leading people in agriculture quickly realize that this is money well invested.

We should be able to get information to the people who want it. We have many means of modern communication. With all these we still hear farmers say, "we can't the information we want". If they can't it is time they did something about it. And a good place to start is right at home!

Galen Driver



Home Economics students at Macdonald College experiment with electronic oven.

Cooking by microwaves captures the imagination of homemaker

by Prof. Helen Devereaux
Home Economics
Macdonald College

ELECTRONIC COOKING

With the arrival of warm weather the homemaker wonders how she can spend less time in the kitchen. The electronic oven could be the answer to her problem if she is willing to invest money in an expensive piece of equipment and also to change some of her food standards. This oven costs around \$1200 and in many cases does not produce the type of cooked product that one is used to, however the speed of cooking has captured the imagination of many homemakers and several thousand electronic ovens have been installed in homes throughout United States and Canada.

The food in the electronic oven is cooked by microwaves which are a particular type of high frequency radio energy produced by a magnetron tube or generator. Microwaves produced in an oven may do any one or a combination of three things (Chart I).

Metals act as reflectors and for this reason metal pans cannot be used for cooking in the electronic oven. Because of this reflection small pieces of metal foil may be placed over the wing tips and legs of poultry with the purpose of shielding them from over cooking.

Containers made of glassware, china-ware, plastics and paper transmit the energy and are not heated and therefore are excellent cooking containers. These dishes will not get hot directly from the waves and can be removed from the oven without a pot holder. On standing, however, they may receive heat by conduction from the hot food. Cooking in the serving dish eliminates the accumulation of pots and pans and since the food does not adhere to the cooking dish, it is easy to wash.

Foods absorb the energy and con-

sequently become hot. This is similar to the situation where, on a cold winter day, the sun streams through a window warming the person sitting in its rays, yet the glass in the window remains cold. The result is that food is cooked in a cool atmosphere, in cool utensils and in a cool range. This method of cooking means a cooler kitchen, elimination of danger from burns and no oven cleaning except to wipe with a damp cloth.

Cooking Time Reduced

The electronic oven will cook food in one-half to one-tenth the time required by conventional methods. Think of the convenience of baking a potato in five minutes or defrosting ten pound turkey in 60 minutes. A frozen meal cooks in 1½ to 4 minutes as compared to the 30 to 40 minutes cooking time in the regular oven.

It is important to know, however, that the cooking time is regulated by the amount of food in the oven; each increase in mass of food lengthens the cooking time. Four potatoes may require twice as long as one potato to bake. Because the food is cooked so quickly there is a great danger of over cooking; vegetables may become mushy and baked products very dry. Some foods continue to cook considerably after removal from the oven due to a

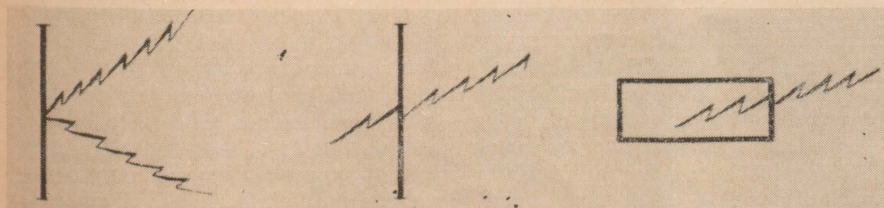
Continued on page 12

Chart I — Microwave Energy

Can Be Reflected

Can Be Transmitted

Can Be Absorbed





Federal Centennial planners are, left to right, Hon. Maurice Lamontagne, Secretary of State, responsible for Centennial observances; Mr. John W. Fisher, Centennial Commissioner and Mr. Robert Choquette, Associate Commissioner.

"Canada's Centennial — For Rural Canada"

This will be a Centennial celebration reaching to the most remote hamlets in this huge country - a gay hootenanny from the shores of Newfoundland to the Queen Charlotte Island and the Northern Seas

THE Prime Minister of Canada, the Right Honourable Lester B. Pearson, in speaking of the Centennial of Confederation in Canada in 1967, has said:

"The more of us who voluntarily work together for the Centennial, the happier our birthday and the more united our country will be. If we can return to the practices of "mutual aid" of frontier days, the "bees" to cut a neighbour's hay or to raise the frame of a new barn, we will not only be true to our past; we will also be building for the future..."

This spirit of involvement, Centennial planners have emphasized from the beginning, must be the heart of the Centennial if 1967 is to be the year all Canadians hope it will be. Mr. John W. Fisher, Commissioner of the Centennial Commission, has repeatedly

stressed in addresses he has made across the nation, that: "... the ideal of our Centennial Year should be a three-hundred-and-sixty-five-days-long Birthday. Throughout that year will be many attractions to make us proud and anxious to see more of Canada. I hope that every Canadian will have his or her plan for participation. Never was it intended that this should be a celebration of governments, with pageantry confined to Ottawa and the ten provincial capitals. Rather the hope all along has been that this will be a Centennial celebration reaching to the most remote hamlets in this huge country; a party for all, which will see not only worthwhile gifts to ourselves and to others, of permanent memorials of a lasting nature, but also a party which will allow for happiness and laughter, music and song, — a gay hootenanny

from the shores of Newfoundland to the Queen Charlotte Islands and the Northern seas ..."

Centennial projects approved in the past year by the Centennial Commission, the Federal Government agency charged with planning and promoting the Centennial, include:

1. The granting of \$100,000 to some fifteen existing agencies, such as the Canadian Council of 4-H Clubs, Les Visites Interprovinciales and the Canadian Council of Christians and Jews, for pilot studies on youth travel and exchanges. It is expected that such grants will be continued in 1965 and 1966 so that it may best be determined how such exchanges and visiting back and forth of Canadian youth may be continued after the Centennial Year under private support; thus becoming a permanent part of Canadian culture.

"a return to neighbourliness and communal virtues of an older age"

2. The granting of \$12,000 to the Canadian Library Association to assist in the Association's Centennial project of microfilming Canadian newspapers of the Confederation period. Copies of the films will be made available to libraries and to newspapers, ensuring preservation of records which might otherwise become lost or destroyed.

3. The appointment of a committee of three men, all experts in the performing arts, to study the feasibility of a travelling National and International Festival of the Performing Arts, which would show in the principal centres of Canada during the Centennial Year.

4. The Confederation Train and Caravans. It is the hope of the Centennial Commission that the train and the caravans will bring to life as they travel and criss-cross the nation, the story of Canada from the earliest days of the explorers down to the marvels of this atomic age. This great Museum of Canada on wheels, the Confederation Train will, in 1967 travel from Victoria, B.C. to the East Coast carrying in its cars originals and replicas of historic documents, paintings and sculptures and exciting recreations of events, of times and of stories, which through three hundred years have made Canada. The caravans will travel to areas not served by the railways and will carry similar exhibits.

Centennial officials expect that visits by the train in the larger centres and the caravans in the smaller, will become focal points for local Centennial celebrations, engendering in the communities they visit all the excitement of the old-time circus trains, when small boys arose at midnight for dawn arrival of the great train.

5. Approved for this summer a re-enactment of the historic voyage which saw the Canadian Fathers of Confederation travel down the St. Lawrence River from Quebec City and across the Gulf to Charlottetown, Prince Edward Island, where they joined Maritime leaders in the first of the Confederation talks.

The Canadian leaders, John A. Macdonald, Cartier, Brown, Galt et al, arrived in Charlottetown harbour on September 1, 1864, uninvited and unannounced. The then Provincial Sec-

retary of Prince Edward Island hastily seized a row-boat at dockside and rowed out to greet the Upper Canadians aboard the **S.S. Queen Victoria** not even taking time to unload the barrel of molasses and the bag of flour with which the small boat was laden. It is expected that the present Provincial Secretary of Prince Edward Island, the Honourable David Stewart, will next September 1, re-enact that historic greeting in a row-boat similarly laden.

Program for P.E.I.

Prince Edward Island, smallest of the Canadian provinces this year in marking the 1864 meeting of the Fathers in their capital at Charlottetown, is going all-out in their prelude to the 1967 observances in Canada.

There are but twenty-five incorporated towns and villages on the Island and every one of them has joined the Centennial celebrations, with plans for flower gardens, town clocks, libraries, rinks, sport fields and community centres. Every community has its Centennial project and the whole Island, from Tignish in the West to Souris in the East will this year be lit up to greet visitors, as the Islanders, a happy and hospitable people, go about their 1964 festivities.

In Charlottetown itself, a city of 19,000 persons, they will have this summer and fall what has been called

"the best cross-section of Canadian art, culture and just plain entertainment ever assembled."

The beautiful new theatre in the Fathers of Confederation Memorial Buildings (a \$5,600,000 complex paid for by the Federal Government and the ten provincial governments, making every Canadian a shareholder in the Memorial Centre of approximately thirty cents each) will feature everything from opera and ballet to Don Messer and His Islanders.

The Role of Rural Canada

Now what of Rural Canada and the Centennial?

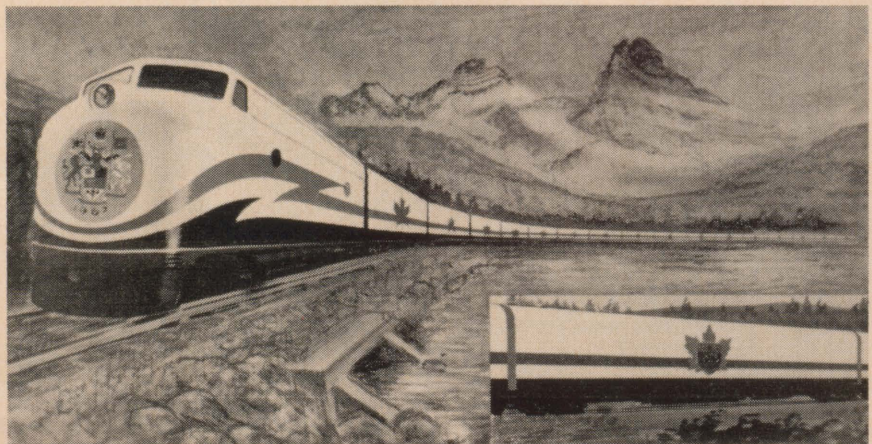
One of the most imaginative and worthwhile projects suggested for the Centennial is that of the Federated Women's Institutes of "Making Canada Lovelier."

In this program, it has been pointed out, there is a chance for Canadians to return to the neighbourliness and the communal virtues of an older age, which saw every family pitching in to achieve a community objective.

First step, Centennial officials say, in embarking upon a community or area clean-up, paint-up and brighten-up campaign, is the formation of local Centennial committees.

Then, with the committee decided upon a project, whether it be cleaning up of eyesores along the highway, or

In 1967, the Confederation Train and Caravans, representing a museum of Canada on wheels, will travel from Victoria, B.C. to the East Coast.



at the entrances to villages, of refurbishing and rehabilitating an old and neglected cemetery, of planting trees and shrubs in school or public building grounds, of marking historical sites or points of interest, work can begin. Communities, officials add, should not be over-ambitious but should fasten upon a Centennial project which can be completed for 1967, without calling upon senior governments for financial support.

Numbers of rural communities in Canada have already carried out such rural beautification programs with marked success. The assistance of paint and varnish and seed companies, of associations and firms, of public-spirited individuals and municipal councils, of the Canadian Federation of Agriculture, of the Farmers' Union, and of agricultural and horticultural societies generally, was enlisted in the initial stages of years-long planning and proved of inestimable worth.

Other suggested Centennial projects for rural communities include such things as small roadside parks, pollution control in lakes and ponds, hiking trails, welcome signs, picnic areas for visitors and tourists, removal of dead trees and stumps, screening of scrap piles and dumps, planting of trees, hedges and flowers, removal of old and unsightly buildings and fountains and road-side springs.

The Friendliest Town

There is a story told of a town in Alberta, Nanton, where residents believe they live in the "friendliest town in the friendly West.

"So friendly in fact that drinks are on the house — from the Nanton tap. A drink of water, that is.

"When Andrew Munro came up with the idea that Nanton should offer the visitor a drink of water from the town's springs six miles to the west, he created quite a laugh. But a tap was placed on the main street and when nearly 25,000 visitors stopped for a drink in five months, and the tap was publicized in a newspaper in Germany, it was Munro who had the last laugh."

So, Centennial planners say, a rural Centennial project does not have to be elaborate to be effective and to return much good and satisfaction to a community.

Imaginative planning in the less than 1,000 days left before the opening of the Centennial celebrations in 1967, can help individuals, families, associations and communities, in contributing to the Centennial observances and festivities, so that all Canadians everywhere may feel themselves a part of the year-long Birthday Party, Centennial officials emphasize.

Rural Teachers Have Their Say

by O. R. Evans

Editors note: There are lots of publications on careers in agriculture, home economics and education available from Macdonald College, free for the asking. If young people in your community are interested in obtaining this information, write to Box 237, Macdonald College, Quebec. In addition, if any school, group, organization or individual is interested in seeing a series of slides about Macdonald College, contact the same address and a staff member will accompany the presentation entitled, "Through These Gates" to your community.

WHAT IS WRONG with farming in Quebec today? Ask that question of 100 people in varied walks of life, and you will get at least 30 or 40 different answers, and when they are boiled down these fall into about a dozen basic categories, depending on the background and current activity of the speaker.

Ask the Quebec farmer this question, and he will say returns are too low, that farmers get, on the average a return of 1% on their investment. The price of milk to the producer has not gone up in the past six years, while mill feeds, machinery, and credit have all shown substantial increases.

Ask the average city man and he will say there can't be much wrong with it, else why do so many stay in it. Or else there can't be much wrong with it when you look at the prices farmers get for their produce.

Teachers in the rural parts of our Province have a good opportunity to gauge such a question, so the Federation of Quebec Protestant Colonization Societies asked 180 High School Principals and Trustees in English speaking school districts a question closely allied to the above, namely "suggest ways in which our Federation can encourage students to make agriculture or forestry their life work".

Of the 40-odd replies received, 29 gave thoughtful answers to that question, and for the sake of brevity these have been condensed into half a dozen categories. Several came right out and admitted that there was more money, less work, and more conveniences in the city.

The main theme of many answers was the need for better returns for farmers, that the cost of getting started in farming was prohibitive. Among the remedies suggested were low interest rates to help young farmers get started, and financial aid for members of 4-H Clubs. Unfair methods of farm land taxation was another complaint.

But as teachers their principal concern was with education. Several wondered why the special courses in agriculture had been dropped from our High School curricula. Many replies suggested more optional courses in agriculture and tree farming, in the care of sugar bushes. Bursaries and vocational training, with vocational guidance in both agriculture and forestry should be more readily available, along with practical (financial) encouragement for rural students to go to Macdonald College.

Repeatedly the teachers complained of the lack of helpful literature which could be handed to enquiring students, and from which teachers could extract lessons to aid them in teaching basic science. In conjunction with the School Guidance program, literature extolling the facts of farming should be available. Topflight local farmers should take an interest in teenagers who might find agriculture or forestry interesting, and work with their agronomes to arrange visits to leading farms, Experimental Stations, and Macdonald College.

And last, but not least, several replies suggested that parents could present a more optimistic picture of their life work to their children. "Students need more encouragement from their parents" was a repeated theme.

A Three Generation Family Orchard

Apple growing is a \$5 million industry in Quebec. This is a story of the Stevenson family, one of the province's 25,000 growers

by Walker Riley

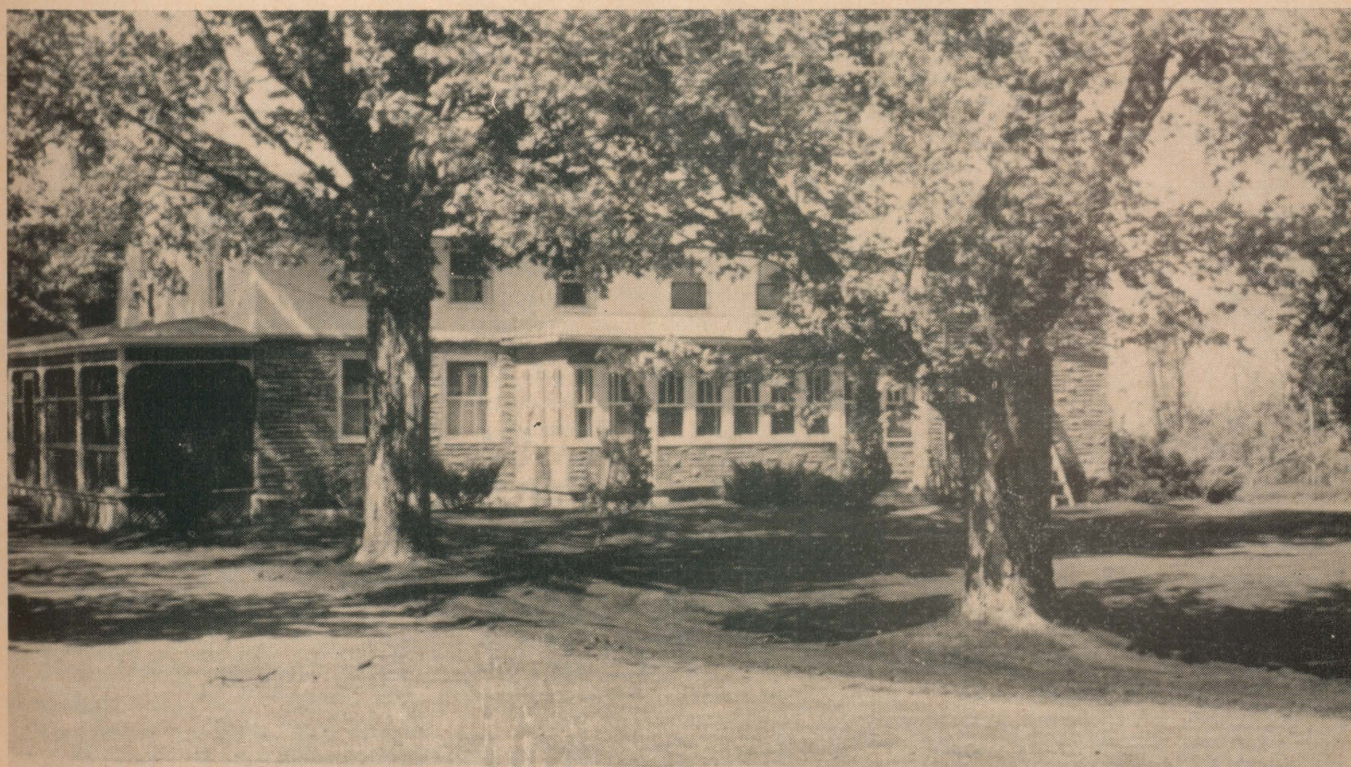
FIFTEEN THOUSAND years ago, the waves of the great Champlain Sea were lapping the hillsides of Southern Quebec. For just a moment, let your imagination turn back the hands of time. Stand on that spot on the south shore which was to become, centuries later, the Stevenson farm. Look out across those icy waters which covered hundreds of feet deep the St. Lawrence lowlands.

To the west, you would see nothing but the unbroken expanse of water; to the north, the hazy outline of the far Laurentian shore. To the north east, you would discern five cone-shaped islands, later to be known as the Mon-

teregian hills, and to the east, the shores of the future Green Mountains.

The centuries rolled lazily by; the waters of the great sea washed the beaches; sand silt slid slowly down the banks; fine clay settled to the bottom; the glaciers slowly melted and retreated. Finally, the time came when the ice plug in the Lower St. Lawrence melted, and the Champlain Sea drained away. The fertile farm lands of the St. Lawrence Lowlands were uncovered. On the sides of the mountains, and on the wave-washed shorelines, there were left behind some of the finest orchard soils in the world.

It was here, on the deep, rich, well-



Beautiful shaded lawns surround the home of the Stevenson family at Franklin Centre.



The site chosen for the new house offers a magnificent view over the Chateauguay Valley. This is part of the forty herd of registered Angus cattle. (above)

As far as possible the Stevenson's have mechanized their operation. Pallet boxes holding 20 bushels of apples and handled by fork-lift tractors have reduced orchard labour.



drained terrace west of Franklin Centre that the Stevenson family established Crystal Springs Farm sixty years ago this summer.

And it must be with great satisfaction that the senior member of this family, Fred Stevenson, now age 83, looks back over his life's work. For in these years, he has seen the farm grow and prosper, first under his own care, then under the skilled management of Floyd, his son, and more lately with his grandson Bill active in the partnership. The beautiful farmstead, the acres of orchard, the herd of beef cattle, and the splendid sugar-bush all bear witness to a family's united industry.

Perhaps we can take the liberty of an imagined walk on a summer evening, with the senior Mr. Stevenson to the higher ground overlooking the farm. He might tell us about their operation this way.

A long view needed

"This orchard business. You have to look a long way ahead; twenty-five years before a tree reaches its prime. See those trees on the left? Fifty-seven years ago this spring, they went in MacIntosh. And those in front. They're Fameuse. Not much demand for them, nowadays. Floyd is top-working them, budding and grafting Mac scions. Slow

work though; takes three or four years to change over a tree.

"And over on the other side there, that is one of Bill's new plantings. Macs and Golden Delicious on semi-dwarf root-stocks. Supposed to be more apples and less work. Used to be Cortlands there. Pulled them out five years ago. He will wish he hadn't if the Co-op puts in machinery for processing."

"See the apple house down there? We did all our packing there until they built the Co-op in '52 in Franklin Centre. The machine shop, that's Floyd's idea. If he can't buy a machine we need, he builds it. He put our little sawmill together; keeps the men busy in the winter; makes his own apple boxes, too. Did you ever see a painted sugar house before? With cement floor and electric lights? Hung 4800 buckets last spring; made a thousand gallons of syrup.

"They've got beef cattle in the barn now. Forty head. Used to ship milk, but it got to be too much work. Bill's thinking about letting the Angus go, too. He likes them, but a small herd is more trouble than it is worth, he says. Maybe he's right; he went to Agricultural College. Getting married this summer, too; they're going to build over there on the corner..."

This remarkable grandfather still takes his share of the work. In syrup season he drives one of the tractors,

and in the orchard, it is he who sets the pace for apple picking.

The busy season in the orchard starts when the first green tip shown on the apple trees. It is the signal for the first of many sprays to control fungus disease and insects. The Stevenson's follow quite closely the guide and spray notices issued by the Quebec Department of Agriculture.

Rules for spraying

Scab control is the first concern. This fungus may almost be named as the factor limiting size. As Bill says, "You should have no more orchard than you can cover with the sprayer in 12 x 14 hours. It takes us 1 1/4 hours to the tankful, and that will do six or seven acres. Our two mist sprayers could handle 100 acres at the most. We have seventy now."

The Stevenson's find that labour for picking is another major worry. They employ two regular men, but during the peak of the season, they will need 25 to 40 pickers. A good picker will take off 50 bushels a day. Each year, the problem has to be faced again; each year, they hope help will be there when needed. "The only solution may be a pickers' camp, with a central dining hall," Bill says.

Continued on page 23



Horses, once the sole source of power on the farm have all but disappeared from the Canadian scene, replacement by tractors calls for larger farm units.

Small farms need more capital for machinery and equipment. This was one of the problems studied at a seminar presented to agricultural students at Macdonald College.

The Small Farm Problem in Canada

by **Galen Driver**

"The problem will have to be individually handled. Not only on a regional basis but with a personal survey of almost every individual farm across Canada". This is how Dr. Peter Harsany* recently summed up a possible solution to this problem while presenting an agricultural seminar at Macdonald College.

Earlier in the seminar, Dr. Harsany defined farms as to size, based on the value of agricultural products sold. This is the same definition as the Dominion Bureau of Statistics used for the 1961 Census of Canada. Commercial farms are farms with a total value of agricultural products sold of \$1200 or more, per year. Small farms are those

whose agricultural sales between \$250 to \$1200 per year.

58% of the cultivated land in Canada is in comparatively large (240-1100) — acre farms. The table below shows this distribution. This fact characterizes the Canadian agricultural industry as dominated by mainly middle or large size enterprises. However, the numerical accent is on the 10-130 im-

proved acre farm sizes, representing 47.7% of the total number of farms.

Dr. Harsany stressed five points:

- 1) The general pattern of distribution of farms by size of improved acres is very favourable in Canada as compared to the international standard. The ratio of large to small farms is favourable;
- 2) There are many farms in the higher

SIZE OF FARM vs. GROSS INCOME

Size of Improved Acreage in Farms	Percent of Total Improved Land	Number of Farms	Percent Small-	
			Scale and Residential	Percent Commercial
under 3 acres	0.01	10,498	71.0	29.0
3-9	0.10	18,582	68.9	31.1
10-69	4.5	115,277	53.4	46.6
70-129	10.5	113,970	25.0	75.0
130-179	7.6	52,330	17.7	89.3
180-239	6.7	33,589	11.0	89.0
240-399	18.1	61,291	5.1	94.9
400-559	14.4	31,825	1.1	98.9
560-759	13.0	20,987	0.44	99.56
760-1119	12.8	14,801	0.15	99.85
1120-1599	6.7	5,358	0.07	99.03
1600 & Over	5.4	2,398	0.16	99.84

*Dr. Harsany obtained his Doctorate in Science in Agricultural Policy from the University of Palatius Josephus, Budapest, Hungary in 1937. Since that time he has written several books, articles, papers and given lectures on Agricultural Economics.

size categories which must be considered economically as small scale enterprises. A large farm does not guarantee a large income;

- 3) 17.2% of all Canadian farms are small scale farms according to the definition of a small scale farm;
- 4) The value of machinery and equipment per improved acre is 14% higher on small scale farms than on commercial farms. However, still many are poorly equipped and this increases the need for hand labour. Small farms cannot make full use of their heavy equipment and machinery. These owners have too much unprofitable capital invested in machinery and not enough invested in cattle;
- 5) Canadian small scale farms are growing hay on a much greater part of the cultivated land. These farms have no more livestock per acre than the commercial farms. In most countries the smaller farms have more livestock per acre — this is not the case in Canada.

"These conclusions and figures are based on all Canada data resulting in averages", Dr. Harsany pointed out. These figures would have to be broken down to emphasize problems in any one problem area.

Any solution for this problem will have to be individually handled, not only on a regional basis but with a personal survey of almost every individual farmer. This need is most urgent, especially to the small scale farmer. Often these farmers cannot find part-time employment off the farm. It would be better if such farmers could find employment on larger farms than in cities. The city employment will sooner or later absorb the part-time farm worker, resulting in further farm abandonment.

Some Solutions

Dr. Harsany offered several solutions to the small farm problem. Neighbouring large, maybe factory-farms, would contribute to keep small operators in agriculture. These large farms will provide these farmers an opportunity to become acquainted with the modern farming methods. Should they be model farms, corporation or large family farms, established or only stimulated by the government is a secondary question. The role of modern factory farms spread over the country and established particularly in the small farm problem areas would greatly improve the agricultural picture.

The main effort in most cases should be to increase the carrying capacity of the small farm. This can be done by increasing the productivity of each acre and by extending the improved acreage of the farm.

In many cases it will be possible to get unproductive meadows improved.

The efficiency of pastures can be increased. If these two changes can be made, more livestock could be carried on these small scale farms.

The carrying capacity of the small farm could be improved by introducing methods of more intensive agriculture, promoting more profitable production.

"Agricultural Processing Centres" in the affected problem areas will help to transform incompetent production systems and lift the standard of living of the farm operators in a considerable radius around these centres.

Factory farms and processing centres in the problem areas will have not only the mentioned benefits. They could also serve as tractor and other machinery renting posts.

More Capital Needed

Small farms need more capital for machinery and equipment. The machine renting post will have to satisfy the needs of costly mechanization. This system would enable the small farmer to invest in livestock instead of machinery.

In some cases a free form co-operative movement between the small farm operators could be justified and very useful.

ELECTRONIC COOKING

Continued from page 5

carry-over of the waves farther into the food. This also means that the food will remain hotter for a longer period of time.

The Electronic oven does not produce that golden brown we associate with so many foods. For this reason manufacturers have installed a browning unit which may be turned on for browning cakes, pies, cookies and quick breads, meat and poultry. The dishes and oven are no longer cool when this unit is used.

The oven is very safe to use. A special interlock automatically turns off the microwaves when the oven door is open so there is no danger of injuring the hands and arms. Special thermometers have been made for use in electronic ovens since ordinary oven thermometers are not suitable.

Vitamin C Retained

Students working in Experimental Foods, Macdonald College, report on the retention of the nutritive value and the palatability of foods cooked in the electronic oven. Their studies showed that there is a greater retention of Vitamin C in cauliflower during electronic cooking. Studies found in the literature indicate that nutrients, including ascorbic acid, thiamine, riboflavin, niacin and amino acids, are retained as much or more in electronic blanching, cooking or reheating as in conventional

Some farmers should consider increasing their number of poultry. A commercial type poultry farm may be the answer for some farmers.

The two indispensable essential factors of the solution are finance and education. Re finance, a special small farm credit system should be organized.

Concerning education, it is important to arrange lectures and winter classes for farmers in the problem areas. Since example is the best teacher, the importance of establishing model farms cannot be exaggerated.

A recent publication from West Germany reported that 35% of the small farms were operated by farmers with university or other agricultural diplomas and 28% of the operators of these farms received previous experience on other farms. By reaching similar educational levels there will not be a small farm problem, and there will be fewer difficulties in the Canadian Agricultural Industry.

Dr. Harsany closed the seminar by saying, "This problem requires immediate attention, and the essential factors of the solution are finance and education. These problems must be individually handled."

methods.

Palatability tests did not always show such favourable results in baked products. Cakes, pies and cookies scored lower when electronically baked, even though the oven was equipped with a browning unit. Excellent precooked rolls and bread were prepared quickly in the electronic oven; these were stored in the refrigerator or freezer and browned in the conventional oven when desired. It has been estimated that 90% of top-of-stove jobs can be done as well or better and faster in the electronic oven. These include such things as cooking vegetables, making sauces, reheating baby's bottle and popping corn.

When buying an electronic range the consumer must realize that it has certain limitations. There are a few items which the oven will not cook, such as angel food cake, and many foods which it does not cook well, particularly those in which flavour is developed by slow cooking, such as tougher cuts of meat. Although each home electronic oven is equipped with directions for cooking, including cooking times, the consumer will find that she will have to do some experimenting herself.

The range is extremely convenient and fast-acting, and does sound like a miracle of the space age. But there remains much study to be done before it could completely replace the conventional range in the home.

Compiled by T. Pickup of the Information and Research Service,
Quebec Department of Agriculture and Colonization.

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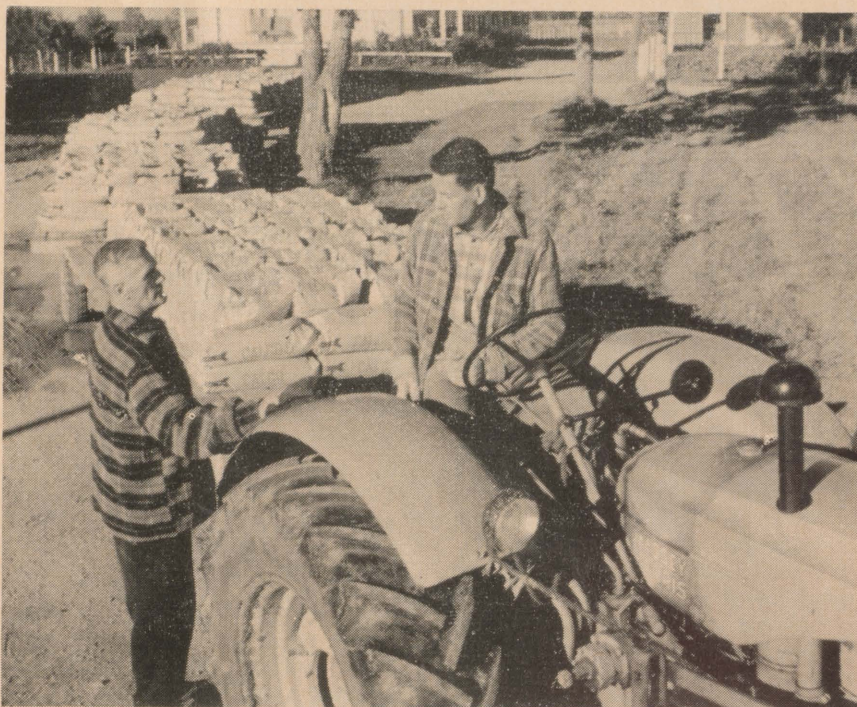
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PHOTOGRAPHS BY
OMER BEAUDOIN



Lime on its way to the fields of Mr. Johnny Bergeron at St. Prime, Roberval.

THE LIMING OF ACID SOILS

by Jean Louis Dionne

*Research at Lennoxville Experimental Farm deals with a
major farming problem in Quebec*

(From Research for Farmers, spring 1964)

MOST OF THE soil in the Province of Quebec is acid. The only region where the soil reaction is, generally speaking, satisfactory is the southwest of the plain of Montreal beginning at Lac St-Pierre. Here, soils with a pH of over 6.0 are often found. In the rest of the Province, pH values are much lower. Eastern Canada is a land of acid soils "par excellence".

The need for experiments dealing with the liming of soils has long been realized at the Lennoxville, Experimental Farm. In fact, the first such experiment was carried out there in 1923, when increases in yields of corn, oats, red clover and timothy attributable to liming were measured. It was found that each of the crops in rotations benefitted from liming. It was estimated that one ton of limestone brought a profit of ten dollars. In the years following, comparisons were made of the merits of different forms of calcareous amendments, and tests were carried out to discover when and how often it was most profitable to lime.

Aims of present research

This early research left a number of important questions unanswered, for example:

- 1) What effect do larger and larger applications of lime have on soil acidity? Is the effect the same on all types of soil?

- 2) Do changes in the degree of acidity result in changes in a soil's content of nutrient elements? If so, which plant nutrients are affected, and in what way?
- 3) Are yields and chemical composition of crops influenced by soil pH? Are different plants, or different plants growing together, all affected in the same way by liming?

Plan of research

In the hope of answering these questions, a fairly elaborate experiment has been carried out at Lennoxville since 1960.

In the laboratory, results of tests have been used to plot neutralization curves (rate of liming against pH) for our principal soil types. It is also proposed to determine the rates at which the pH and nutrients content of soils change with increasing applications of lime.

In the greenhouse, the effect of liming on grasses and legumes is being studied in five types of soil, ranging from sand to clay, and at four different levels of pH (5.0, 6.0, 6.5, and 8.0).

In the field, on 1,500 plots, the influence of pH on the establishment, growth, and botanical and chemical composition of the following combinations is being studied: (a) alfalfa-timothy; (b) Ladino-timothy; (c) oats-Ladino-red clover-alfalfa-timothy in a 4-year rotation. The plots are located on four different types of soil near Montreal, Quebec, and Sherbrooke.

Preliminary results

The experiment has already yielded valuable information. A neutralization curve has been obtained for each type of soil. For example, it takes two tons of lime per acre to raise the pH of St-Jude sand from 5.2 to 6.5. To produce the same effect on Ste-Rosalie clay, five tons per acre are required.

The influence of lime on yields of alfalfa and Ladino clover has varied from one soil to another. On Ste-Rosalie clay, yields increased as acidity declined, even up to a massive rate of liming of 30 tons to the acre. On the other types of soils, yields of legumes increased as acidity declined until the pH reached 6.0 or 6.5, but with heavier liming yields remained about the same or decreased. Thus, it appears that while there is not much risk of over-liming some soils, others must be treated with measured quantities.

The field tests have shown that legumes differ in their requirements as regards soil reaction. For example, alfalfa will not grow on acid Greensboro or Coaticook loam at a pH of 5.2,

whereas Ladino clover grows fairly well in such soils if a potash-rich fertilizer is applied.

Several more years of research will be needed to provide enough information about the effect of lime on our soils and field crops. Moreover the programme will have to be changed to test the theory that the effects of liming depend on the amount of certain trace elements in the soil. (It has been noticed that excess of manganese in acid soils was one of the causes of poor plant growth, and that massive doses of lime may lead to boron deficiency in some soils). The liming of acid soils will be studied at Lennoxville for some time to come.

(From **Research for Farmers**, Spring-1964)

THE DESTRUCTION OF WORMS IN SHEEP

A recent discovery has put a powerful weapon for the destruction of parasitic worms into the shepherd's hands. This weapon is a substance called "Thiobenzol" which has proved strikingly successful in trials carried out in Canada, the United States, Australia, and New Zealand.

Mr. Marcel Tremblay of the Quebec Department of Agriculture and Colonization suggests that the remarkable effectiveness of this product may lead to its replacing phenothiazine. Thiobenzol is particularly effective against the three most harmful internal parasites of sheep: stomach worms, nodular worms, and the worms that cause black scours. The new vermifuge comes in the form of a fine, white, tasteless powder, which is insoluble in water, does not discolour the wool or the hide, and

This page supplied in the interests of the Family Farm by the Quebec Department of Agriculture and Colonization.

does not lead to photosensitization. The powder is mixed with water and administered with a drenching bottle or a syringe. As regards dosage and precautions, the manufacturer's directions should be read.

The whole flock should be treated in spring before being put out on pasture. Following treatment, the flock should be kept for a few days in the sheepfold or in a small enclosure, so that their regular pastures will not become contaminated. Ewes should not be treated during the four weeks preceding lambing nor during the four days following lambing. The treatment should also not be administered during the month prior to slaughter.

A half-dose may be given at the beginning of July if signs of stomach infestation (e.g. anaemia) are noticed. Once the flock has been rid of parasites, certain precautions must be taken to prevent the sheep from becoming re-infested. The flock should be put onto dry land, under a system of rotational pasturing, so that the life-cycle of parasites of the stomach and intestine can be broken. Sheep should be wintered in a clean, dry, well-ventilated and sufficiently roomy shelter. The ewes should be properly fed.

Briefly, health and profitability of sheep are the result of the competence and effort of the person who tends the flock.

Some Oxford sheep on the farm of Mr. Roy Perrault, at Shenborough, Pontiac.



THE CONTROL OF EXTERNAL PARASITES OF SHEEP

External parasites which infest sheep cause considerable losses in some flocks. These parasites include the lice, ticks and keds that live in the wool or on the skin of the animals and there give rise to serious troubles. The infested animals rub, scratch, and bite themselves, lose weight and shed their wool. The parasites also bite the sheep or suck their blood and, if nothing is done about them, lead to fairly heavy mortality in the flock. Mr. Marcel Tremblay of the Quebec Department of Agriculture and Colonization makes the following recommendations for their control.

As soon as these parasites are found to be present in a flock, effective treatments should be applied to control them and, if possible, all the animals should be dipped in water containing a special pesticide which is sold by most agricultural cooperatives.

Dipping is carried out in spring, on a warm sunny day after shearing is over. If there is any risk of the weather being too cool, it is better to let the sheep dry off indoors. At least ten days should elapse between shearing and dipping, so that cuts will have time to heal.

Insecticide sprays are effective and simplify the work; but they are not as reliable as dipping for achieving complete destruction of the parasites.

If the owner does not wish to dip his sheep (in spite of the fact that this is the best method) he can kill the parasites by applying louse powder to the backs and bellies of sheep and lambs.

After the animals have left the sheepfold for their summer pasture, care should be taken to give the building a good disinfecting so as to destroy all parasites that may still remain in it.

BEEF CATTLE AND CALVES ON PASTURE

After having spent the winter in confinement or under a system of loosehousing, beef cows and their young calves (born in March or April) should be put out on pasture as soon as weather permits and the grass has grown enough to provide good grazing.

Calves belonging to purebred herds should have an identification mark tattooed in the ear before they go out on pasture. The owner should also



Corn on the farm of Mr. H. J. O'Connell, Ste. Genevieve, Jacques Cartier.

enter the number of each calf in his breeding register in order to help him to select his heifers in the fall. Another task to be attended to is the dehorning of the calves with an electric dehorner or suitable chemicals. Male calves which are to be raised for slaughter must be castrated.

Mr. F. Arsenault of the Quebec Department of Agriculture and Colonization reminds us that good pastures are as important for beef cattle as for dairy cattle. Soft or muddy land should be avoided because it often leads to footrot and abnormal growth of the hooves.

If the animals do not keep the pasture cropped short enough and the grass gets too long, it should be mowed. This practice stimulates the plants into new and more nutritious growth. At the end of the season or during periods of drought, lack of good grazing can be made up for with hay or silage. In pastures where there are no trees, a simple, cheaply built shelter will be required. Needless to say, the animals should never lack water.

Insecticide sprays applied at intervals during the summer to control flies will allow livestock to graze and rest better instead of unprofitably fretting. Whatever breed is being reared, the chief factor of success is good herd-management. Moreover, a good herdsman will keep an eye on his animals when they are on pasture as well as when they are in the barn.

With good grazing, water, and all the minerals they want, beef cows and calves will remain in good health and make the gains required of them — to the great satisfaction of their owner.

GROWING CORN FOR GRAIN IN QUEBEC

Mr. Philippe Granger, farm manager at the Institute of Agricultural Technology at St-Hyacinthe, predicts that a bigger crop of grain corn will be grown in his county this year, in view of the very encouraging results obtained by some growers in St-Hyacinthe last season.

Mr. Granger believes that it is possible to grow corn successfully for grain in the region of St-Hyacinthe if certain steps are taken to ensure a profitable yield. For example, seed should be sown carefully and at the proper rate: too large a number of plants to the acre hinders uniform growth of the stems and leads to lodging.

Since soils in St-Hyacinthe are not, generally speaking, very rich in plant nutrients, Mr. Granger believes that 16,000 plants to the acre are enough to yield a good crop of grain corn. About 85% of the seeds sown can usually be expected to germinate; thus sowing at the rate of one seed every ten inches in rows 36 inches apart should give a dense enough stand. Planting as accurate as this can only be achieved with a special seeder whose discs are gauged to suit the size of the corn seeds.

Sacks of seed corn carry a card showing the correct disc settings for different types of seeder. The speed of the seeder should not exceed four miles per hour. Sowing should be early — not later than the 25th of May. In plantings of corn which are being grown for grain, the tassels should be out before the first of August.

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ONE MORE YOUNG MINK PER LITTER MAKES ALL THE DIFFERENCE

At the present time, it is not profitable to raise mink unless each female kept through the winter rears an average of 3 to 3¼ kits. Mr. S. Poliquin of the Quebec Department of Agriculture and Colonization considers that this is the minimum necessary to enable the breeder to meet costs of feeding, housing, labour, vaccination and other expenses of keeping the breeding stock for a year. Thus, one extra young mink per female may ensure the profitability of a mink farm, since each kit that is born and survives represents a potential \$15.

It is therefore most important that everything possible be done to favour the survival, health and vitality of the young ones. In this connection, it should be remembered that many kits die at birth or in the few days following. Hence, the breeder's powers of observation and attention may play a vital role during that period: by keeping his eyes open and his ears alert, he may detect and interpret the behaviour of the females before and after they give birth, and hear the sounds of distress or contentment made by the newly born young.

If kits are suffering from cold or hunger and their mother does not seem to be able to satisfy their needs, there is good reason to intervene and place the young ones with another litter which is normal in every respect and younger by a day or two.

Whelping may be difficult or even disastrous owing to a number of different causes, especially in the case of fat females: the chief causes, however, are connected with feeding and management of the herd.

Feeding

Fresh and wholesome food

Rancidity of meat and especially of fish is a frequent cause of trouble. Such food stored in refrigerators for a fairly long time (3 to 6 months) or under poor conditions for a shorter period, becomes oxidized and rancid and may even lead to abortion, resorption of the foetus, losses at birth, or lack of milk (agalaxis) in the mother. Fresh, or fresh-frozen and wholesome food will prevent many troubles and thus favour a larger average number of surviving kits per female.

Nutritive value of food

During the early days following their birth, the young ones will be fed on the colostrum of first milk of their mother. Colostrum contains special nutrients, vitamins, and antibodies

which confer immunity to diseases that attack the young animals. The milk of the female mink is rich in proteins, sugars and fats: it is thus necessary to supplement her ration by adding indispensable substances which will allow her to replenish her reserves in order to suckle her kits. During this period, beef liver or horse liver is an indispensable component of the diet. Whole milk or milk made from skim-milk powder should be used instead of water to soak the food. Because salt has an indirect effect in preventing anaemia and nursing sickness in the females, it is advisable to add it to their ration at the rate of 0.5%, or 8 ounces per 100 pounds of dry food. It is also necessary to give the females fresh water several times a day.

Ventilation of nests

Watch for temperature changes

Nests should be big enough, and there should be good, dry, clean litter in them at all times. If the weather is warm during the day, the nests will require more ventilation. Sudden changes of temperature and the condensation of moisture in the nests that they may cause are not good for young mink. In order to prevent cold air from entering nests it is advisable to reduce ventilation on cold nights.

THE NEED FOR POULTRYMEN'S ASSOCIATIONS

For a long time, poultry-keeping was a somewhat neglected branch of agricultural production in Quebec; but during the past 15 years it has greatly revived. The statistics show that, in 1961, our poultry-keepers earned gross returns of \$57 million, or ten times the annual average for the ten years 1931-1940.

While the total number of producers has declined, huge poultry enterprises have been launched and broiler raisers have begun to outstrip commercial egg producers. In spite of the headway that has been made, Quebec still has to import between 50 and 60 million dozen eggs a year from neighbouring provinces.

As happens in other fields, specialization has given rise to a host of problems in poultry-keeping, and poultry producers are finding it necessary to join forces in order to meet their obligations: they should bear in mind that associations based on the principle "Unity is strength" protect the common interests of all their members.

If it is true that progressive poultrymen are far-sighted, they will have a chance to prove it in 1964 by taking

part in the founding of a new poultry producers federation. The effectiveness of this new organization will largely depend on the cooperation of the producers in the study of their numerous problems.

Mr. René Pelletier of the Quebec Department of Agriculture and Colonization points out that, in the past, no organization has been able to unite poultry producers, notwithstanding the keenness of its directors. It would therefore be desirable for commercial egg producers and broiler producers to organize themselves into two separate divisions within a single association. In this way, the two different types of producers could each draw up their own programme and strive to solve their special problems.

In addition, our farmers should be encouraged to form a "family" poultry-keepers' association with the aim of preventing poultry-keeping from disappearing from our farms and, on the contrary, adding to the farmer's income and preventing undue centralization of the poultry industry.

A NEW FLOUR MILL AT MONTREAL

The Minister of Agriculture and Colonization, the Hon. Alcide Courcy, announces that Maple Leaf Mills Limited will begin construction immediately of a flour mill in Montreal at a cost of \$1,500,000. The mill, which will have a capacity of about 100 tons a day, should be completed within nine months and has been designed primarily for the production of soft wheat flour. It will be located near another plant belonging to Maple Leaf Mills in Montreal which is used for the production of formula feeds for livestock. The proximity of the two plants will permit their integrated operation for the manufacture and sale of flour and balanced feedstuffs.

Recalling the establishment of a livestock feed plant in Quebec City two years ago by Maple Leaf Mills Limited, Mr. Courcy points out that both that event and the decision to build a flour mill at Montreal are sure tokens of confidence in the development of Quebec's economy as a whole and of the progress of her agriculture.

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WET-BELLY DISEASE IN RANCH-BRED MINK

by C. K. Gunn

For years this disease was thought to be due to faulty nutrition but present evidence points to infection as cause.

WET-BELLY disease is widespread and causes heavy economic loss in the mink ranching industry today. During the past seventeen years, this condition has generally been ascribed to faulty nutritional ingredients in the rations. With the shortage of horse meat for mink feeding purposes, protein substitutes such as chicken waste, whole fish and tripe have largely replaced it in mink rations. This change in feeding practice was observed to give rise to the disease.

In our investigations at the Experimental Fur Ranch, Summerside, P.E.I., we have shown that wet-belly disease is an infective condition, occurring under ranching conditions when heavily infected young male mink become chilled. However, the disease can be experimentally induced among infected females and adult male mink by more drastic exposure of these animals to cold housing conditions.

In wet-belly disease, the fur is frequently stained on the belly side of mink and gives rise to unprime, pigmented leather underlying the externally wet area of fur. The fur hairs of unprime leather pull out readily after the pelt is dressed. These serious defects in the pelts from affected animals greatly reduce their valuation at the fur auctions.

Our studies at Summerside have revealed that the trouble is caused by a high bacterial content in mink rations

having high proportions of animal intestines such as chicken entrails, whole fish in which the intestines are present, and the intestine of cattle (tripe). We found that these feed stuffs, when experimentally fed in high proportions caused as high as 70 per cent wet-belly disease among kit male mink.

Some of these bacteria, under conditions which lower the body defences, acquire the ability to invade tissues of the mink and set up an infective process. We confined our studies to one of these organisms (*Proteus mirabilis*) which is found more frequently in mink with wet-belly disease than among normal animals. We obtained it from diseased (inflamed) tissues of affected mink and, by means of a specific test (macroscopic agglutination), showed it to be the same organism as that found in the intestines of the affected mink, and in massive quantities in chicken waste, whole fish and tripe. This test also showed a large amount of antibodies in the blood serum of affected mink, an indication that this particular organism caused infection in the animals.

In our investigations, we found that horse meat rations cause practically no wet-belly disease, and *Proteus mirabilis* was not present. Horse meat is muscle meat and has a relatively low bacterial content compared with the massive contamination present in animals' intestines which are used in mink rations. However, when we added large doses of the organism to a horse meat ration, as many as 50 per cent of kit males developed wet-belly disease. We also recovered the same organism from the affected tissues.

The chief economic losses caused by wet-belly disease occur in kit male mink. This is because at pelting time the disease is almost entirely confined to them, with less than one per cent occurring in kit females at this Station.

Wet-belly disease however, can be induced in a significant number of females and male adult mink, if they have received the wet-belly-inducing ration and are then exposed to cold housing conditions. (We experimentally induced wet-belly disease in 20 per cent of normal females and 50 per cent of normal adult males by exposure to cold after they received a disease-inducing ration). Exposure to cold, we found, lowers their resistance sufficiently for the potentially pathogenic organisms to infect them.

From our experience in reducing the incidence of wet-belly disease in mink we offer the following control measures:

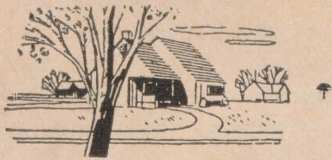
(1) Clean and sterilize (with live steam, if possible) all dens and pens before placing young mink in them at weaning time.

(2) If raw chicken waste, whole raw fish or tripe are to be fed in the mink rations, take measures to see that (a) the feed is *free of fecal material*, (b) that all products containing entrails are *frozen immediately* after they are taken from the animals and they should be kept at low temperatures, (c) before using these ingredients in the mink rations, they should be *cooked*, (boiled for 2 hours), (d) otherwise, *substantially reduce* the quantities of these by-products in the ration from October 1, until pelting date.

(3) *Keep the pens and nest boxes well bedded and dry*, especially during the autumn season to *keep the mink warm* during the change from warm weather to the cold autumn nights. If the furring shed is equipped with shutters, close them to *protect the mink from* the cold winds and rain in the autumn season.

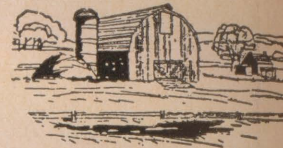
Dr. Gunn is Director, Fur Animal Research, Experimental Fur Ranch, Summerside, P.E.I.

From "Research for Farmers".



The Better Impulse

NEWS AND VIEWS OF THE
WOMEN'S INSTITUTES OF QUEBEC



FROM THE PUBLICITY CONVENOR

Congratulations now to MATAPE-DIA who celebrated the 10th Anniversary of the Branch at a social evening in the College Hall. Proceeds of the evening will be used for WI work.

Do you know your officers? With County and Provincial Annual meetings now over, and with new officers elected, now is the time to learn the names and addresses of all those responsible for guiding the QWI for the coming year. A Roll Call or a Quiz might be a good idea. Be sure your incoming branch and county officers and conveners are informed to whom reports or other information should be sent.

Christmas stocking project is gaining momentum, with many more branches reporting stockings packed and shipped.

MAGAZINES FOR NORTHERN W.I.'S.

In *Federated News* of January 1964, Mrs. J. Haggerty, FWIC President, wondered if some branches might like to send magazines to our newly formed Northern Branches. Picture magazines are preferred, as many members through lack of educational facilities in the past, do not read, or do not read well. Magazines rolled up, and fastened, two or three at a time, can be sent at Postal Magazine Rates (3 cents for 2 ounces; and 2 cents for each additional 2 ounces). They may also be sent Parcel Post, under a weight limit, (30 cents for one pound, and 16 cents for each additional pound) although this is a more expensive method of shipment.

Magazines may be sent to:
Mrs. A. J. Kerr, Secretary-Treasurer,
Aklavik Women's Institute
Aklavik, Northwest Territories

Mrs. Elijah Menarik, Secretary
Delta Women's Institute
Inuvik, N.W.T.

Mrs. M. G. Wiggins, Secretary
Fort McPherson Women's Institute
Fort McPherson, N.W.T.

Mrs. John G. Craig, Secretary-Treasurer
Fort Providence Women's Institute
Fort Providence N.W.T.

Mrs. Shirley Cronan, Secretary-Treasurer
Tuktoyaktuk Women's Institute
Tuktoyaktuk, N.W.T.

CHILL PICNIC FOODS

The Poultry Products Institute has a suggestion in *Home and Country*, Nova Scotia, for an easy way to keep frozen foods cool several hours for your picnics.

"Freeze unopened cans of tomato, V/8 or fruit juices in freezing compartment of refrigerator. Wrap frozen cans in waxed paper or plastic to keep moisture, which condenses in cold cans, from wetting food packed around them. Arrange chilled perishable foods (sandwiches, cold fried chicken, hard cooked eggs, etc.) around cans in food hamper, basket or carton. Use several layers of newspapers to insulate a carton or open basket. Be sure to cover with paper too if no lid is available.

Juice will take usually three to four hours to thaw and then may be used as a drink."



Mrs. EVA GILSTORF

Mrs. Gilstorf, who will be a speaker on safety at the QWI Convention, was born and educated in Winnipeg, coming to Ottawa in 1953, where her husband is with the Dominion Bureau of Statistics. They have two teen-age daughters and one son.

Mrs. Gilstorf, a former photographer's model and figure skater, worked in Ottawa as a dental assistant, secretary, and Registrar, School of Nursing, Ottawa Civic Hospital.

THE CHRISTMAS STOCKINGS

In 1959 the Toronto branch of the Canadian Save the Children Fund filled 125 stockings and sent them to the Children's Wing of the Masan Hospital in Korea. This was so appreciated that a letter was sent asking all groups to participate. Other groups took up the idea until more than 3,000 are now sent yearly to Italy, Greece, Korea, Hong Kong, Algeria, West Indies, Jordan and Vietnam.

In 1961 news of the project reached the office of the Quebec Women's Institutes. Believing it would appeal to the hearts of the women of the QWI a note was sent to the branches explaining it. It was immediately taken up by the members and stockings filled with knitted articles, toys and tinned candy, etc. began to pour in. The first year, 1962, produced 743, which was felt very good for a membership at that time of under 2,500. The latest figure for 1963 is 861.

The stockings have to be sent months ahead as before reaching the children they travel many ways, by boat, train, mule-back and even by bicycle. Letters which come back telling of what these stockings from Canada mean to children for many of whom it is the first present or toy they have ever had, is reward enough for the time spent making and filling these little stockings.

LOCAL TRAINING MEETS A VITAL NEED

The first five local women leaders to receive training in their own country with the aid of a grant from the Lady Aberdeen Scholarship have now returned to their home villages in Southern Rhodesia to put into practice what they have learned. For many years one of the most interesting jobs of the Women's Institutes of Southern Rhodesia has been working with Homecraft Clubs for African women. Individual members travel many miles each week to give classes in cooking, hygiene, childcare, housekeeping, first-aid and many forms of handwork. Many Clubs are now run most successfully by the members themselves.

To ensure the continuance of this work, the need for trained leaders has been one of the most urgent requirements and short three-day Leadership Courses were held. These were so successful and so much sought after

that it was obvious something more was needed. With the help of the Bulawayo African Affairs Department the first three months course for five women was held in a model cottage at Njube Township. The funds to run these courses and to pay for the rent, food, heat and lighting for the trainees had to be raised by the Women's Institutes themselves with any help they could get. It wasn't easy.

In February 1963, at an Annual Council Meeting of ACWW in London, a most generous donation was handed over to the Lady Aberdeen Scholarship Fund by the National Federation of Women's Institutes of England, Wales, Jersey, Guernsey and the Isle of Man, as part of their contribution to the Freedom From Hunger Fund with the proviso that it must be used in the present Triennium. At the Council Meeting, Mrs. H. Boase, representative of the Federated Women's Institutes of Southern Rhodesia, made a stirring appeal for financial help to enable more of these leadership Courses to be held. The clear outline she presented of the whole project met with an instant response and it was unanimously agreed to make an immediate grant to finance four training courses, each for five local leaders, for a period of two to three months.

The women who take these courses love them — they leave their own homes for perhaps two months or more, and live in the cottage at Njube where they housekeep, budget, cook, work in a children's crèche to learn baby-care, hygiene and child-care. They elect a Committee, keep Minutes, learn simple book-keeping, grow vegetables, keep poultry, make clothes, knit and make pottery (which they are very good at!).

At one time it was thought that pottery should be left out of the course as they had such a full timetable. But the students had other ideas; pottery making appealed to them. When asked to lend some of the articles they had made — dresses, hats, handicrafts — for a display at the end of the course, they produced a box of beautiful hand-made pottery. They had persuaded the potter to give them lessons in their limited spare time, because they were anxious to learn all they could.

These first Lady Aberdeen students to receive local training have written to express their thanks and to tell what they have learned. The letters are delightful. Here are a few brief extracts: "We kept busy — you couldn't move an inch out of the class — during our spare time we did a lot..."; "This course is the course we have been waiting for years..."; "We were five women from different places. I think it took as few minutes to be happy together as

if we knew one another..."; "I am thanking you all about the way you kept us busy — it was very good because we did not find ourselves lonely. We were just kept like as we are at our homes..."; "I did not know the right way of looking after my home, my children and I did not know sewing and many other things that I have learned...".

The second training course has been completed successfully. Not all these students were literate so instead of letters of thanks they have chosen, and themselves paid for, a pottery bowl made by one of the women on the course and are sending it to the Central Office where it has just arrived. It is beautiful and will be greatly treasured.

The Lady Aberdeen Scholarship Interim Committee has just made a second grant of a further £300 which will finance an additional four courses. This sum is made up of £170 raised by the Nederlandse Bond van Plattelandsvrouwen specially for this project and £130 from the LASF/NFWI/FFHC donation.

The Dutch members raised the money by asking each delegate to bring one good piece of craftwork as a gift to the Annual Meeting held a few weeks before Christmas. Our President tells us the tables of charming gifts were cleared in just over half an hour.

And so the courses will go on. All praise is due to the members in Southern Rhodesia who pioneered this work. It is good to remember that one of the Trainee Leaders wrote "To educate one mother is to educate more than five people".



PROF. W.A. MAW OBITUARY

Prof. W. A. Maw, formerly head of the Poultry Husbandry Department at Macdonald College, died suddenly June 2, in his 71st year.

A 1920 graduate and a member of the staff for 39 years, Prof. Maw was named chairman of the poultry department in 1926. He retired in 1959 and continued to reside in Ste. Anne de Bellevue.

Prof. Maw was well known in poultry circles. He took an active part in several organizations, including The Agricultural Institute of Canada, The Poultry Science Association and served on the Quebec Poultry Industry Committee. In 1962, he attended the World Poultry Congress in Australia.

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THE MONTH WITH THE W.I.

ARGENTEUIL : ARUNDEL reports a blind auction and a card party. Plans made for a bazaar in July. **BROWNSBURG** discussed plans to cater to Brownsburg High School graduation, also a bus trip to Ottawa Horticultural Exhibition. Had a demonstration of flower arrangement and auction of slips and bulbs. Arranged coffee party and bake sale in aid of Sick Fund. **FRONTIER** went on a conducted tour of Carillon Dam and Power House. Had hat-making contest. Arranged casserole supper. **JERUSALEM - BETHANY** visited antique home. Made a quilt for sale. Made plans to cater to a wedding. **LAKEFIELD** exchanged plants, flowers, slips and bulbs. Report on county convention. House-cleaning contest held. **PIONEER** sale of plants, slips and bulbs. Film shown. New member welcomed. Tickets sold on quilt made by members. **MILLE ISLES** visited by county president. Agriculture convener read article on annual flowers. \$10 donated to Morin Heights High School for prizes. **MORIN HEIGHTS** entertained 22 grandmothers. Enjoyed slides of the far north by guest who had lived there several years. Making Xmas stockings. **UPPER LACHUTE-EAST END** report on county convention. Life member pin presented to a charter member. Home Economics distributed pamphlets and discussed exhibits for local fair. Newly made quilt was on display.

BONAVENTURE : **BLACK CAPE** answered roll call with an idea for improving their village; "Name the Cake" contest held. **GRAND CASCAPIEDIA** welcomed three new members; discussion on Christmas Stockings and their purpose; successful card party held; "Naming a Bachelor" was the roll call. **RESTIGOUCHE** held card party, sold jewellery set to raise funds; Pennies for Friendship are being collected at each meeting; material contributed for making Christmas Stockings; Apron sale held with proceeds given to County Treasurer for Educational purposes.

CHATEAUGUAY-HUNTINGDON : **AUBREY-RIVERFIELD** heard a story on health read by Mrs. Templeton, "Is It Safe to Be Sick in Canada?" Salvage collection organized and arranged with the Salvation Army; Surprise birthday cake for member enjoyed by all. **DUNDEE** heard highlights of County Convention; exchange of slips, bulbs and plants, subscribed to Federated News.

FRANKLIN CENTRE presented W I Pin to Mrs. A. Reid for her valued work in the branch. Mrs. Reid is moving to Huntingdon; Card Party held with proceeds going towards fund for an orthopedic limb needed by a young girl. **HEMMINGFORD** heard talk, and held quiz on "Fire Safety on the Farm"; arranged Salvation Army salvage collection; held plant sale. **HOWICK** saw slides of local beauty spots, of floods and ice storms, and of tulips at Ottawa; special donation given to Miss Carol Carson for her outstanding contribution to the Music Festival. **HUNTINGDON** had Mr. R. J. M. Reid, Agronome, as guest, speaking on vegetables, plants and flowers; sale of plants; entertained Aubrey - Riverfield Branch. **ORMSTOWN** were hostesses to Annual County Convention; at regular meeting entertained another branch. **COUNTY** donated \$25 to Scholarship Fund of the Chateaugay Valley Music Festival.

COMPTON : **BROOKBURY** went W I Cookbook to FWIC Convention. **CANTERBURY** held paper drive; sent clothing to Save the Children Fund; exchanged slips and bulbs. **COOKSHIRE :** guest speaker was Mr. D. M. McMillan, Agronome, who gave valuable information on horticulture; clothing sent to Save the Children Fund; sale of plants and slips; Pennies collected. **EAST ANGUS :** Three members gave the W. I. Broadcast on CKTS; heard an article on Beauce County; held paper drive; held cookie contest. **EAST CLIFTON** held question and answer period on Bill 16; held Penny Auction for Sunshine Fund; clothing sent to Save the Children. **SAWYERVILLE** held quiz on plants and flowers; packed clothing for Save the Children. **SCOTSTOWN** also held successful paper drive; sale of plants and slips.

GATINEAU : **AYLMER EAST** heard paper on "The Spice of Life on the Farm"; roll call named a Canadian Export. **KAZABAZUA :** information on The Common Cold, by Health and Welfare Convener. **LAKEVIEW** made a presentation to their past-president, Mrs. R. LaBonte for her valued services in the past two years. **WAKEFIELD** held quiz on the Constitution and By-Laws of the QWI with prizes won by Mrs. F. Welock and Mrs. L. Vaillancourt; collected for Cancer Society (\$263); set of hand-woven guest towels displayed, to be sent to FWIC Convention. 44th Annual County Convention,

held at LUSKVILLE was attended by all branches and were pleased to have Mrs. Ellard, Mrs. Ossington and Mr. T. C. Main as guest speakers.

JACQUES CARTIER : **STE ANNE DE BELLEVUE** welcomed four new members; Clothing for victims of flood and earthquake disaster collected; Window Box Contest for members got underway; Social evening held, which included a strawberry social, with proceeds donated to Pennies for Friendship; sale of plants; Birthday Supper held at Macdonald High School. Donation to Shriners' Hospital in memory of late member — Mrs. G. Harnott.

MEGANTIC : **INVERNESS** planned and held successful card party; pillow cases and handmade socks donated to travelling prize fund. **KINNEAR'S MILLS** were hostesses to County Convention where they welcomed Mrs. Ellard as guest speaker.

MISSISQUOI : **COWANSVILLE'S** Agriculture Conveners, Mrs. L. Lewis and Mrs. H. Smith gave hints for gardening, how to prune fruit trees, warned of dangers from insects; branch will continue to sponsor a child from Jamaica for another year. **DUNHAM** saw coloured slides of surrounding country, with emphasis on agriculture; quilt which is to be sold was on display; gifts presented to a member who is going to England, and to member who is moving to P.E.I. **FORDYCE** heard talk on Apple Trees by Mr. Arthur Hobbs, Forestry Engineer; slides shown of 750 acre orchard in Mars, Pa., visited by Mr. Hobbs; contest on corsages made from vegetables won by Mrs. M. Lewis; sale of slips and seeds. **STANBRIDGE EAST** discussed BILL 60; contest using names of vegetables or herbs; will sponsor adopted Greek twins for another year; new project is to assist the newly formed Cancer Society of Bedford and surrounding district — will help to fill "friendly cupboard" for cancer patients.

PAPINEAU : **LOCHABER** welcomed Mrs. Ossington and Mrs. Wells to their Annual County Meeting. Members felt that these visits of Provincial Officers are most valuable, in supplying information, and in drawing branches closer together in the W.I.

PONTIAC : **BRISTOL** had a demonstration on Flower arrangement by Mrs. Stones and Miss Murphy. **CLAREN-**

DON donated to Cancer Society. FORT COULONGE welcomed five new members; heard two papers on flowers by Mrs. Robb. QUYON heard Mr. Raymond Johnston, M.L.A., at their 17th Anniversary Banquet; sponsored a play produced by Father May of Vinton. SHAWVILLE continue to sponsor Clean-Up Campaign for run-down properties in town. WYMAN-ELMSIDE collect donations for Brookdale Farm each month.

RICHMOND: CLEVELAND held social evening for husbands and friends; slip and bulb sale; donated to Dixville Home for Retarded Children. DENISON MILLS has window box project in progress again this year; Cookie Contest held, judged by Mrs. D. Rief, won by Mrs. A. Boreham; slip and bulb sale. GORE: Mr. L. Yvon Parent, Agronomist, spoke on proper wiring on the farm, and different kinds of fertilizer for good soil; slip and bulb sale; Roll Call named a fruit or vegetable in French; aprons brought in for forthcoming contest. MELBOURNE RIDGE gave out seeds for school fair in the fall; catered to Hussars Banquet; named a flower as roll call; jumbled letters contest on fruits and vegetables won by Mrs. A. Smith and Mrs. S. Johnston. RICHMOND HILL held slip and bulb sale. RICHMOND YOUNG WOMEN were hostesses to Richmond County Annual Meeting; discussed ways to beautify countryside; slip sale; two contests arranged by Agriculture Convener. SHIPTON held word contest won by Mrs. J. Saffin. SPOONER POND: Quilt for interbranch competition displayed; seeds for

School Fair distributed; Tuberous Begonia Bulbs distributed for competition in the summer; sale of plants, slips, and bulbs.

All Richmond County Branches are progressing towards the interbranch competition for Richmond County Fair, with some items now completed.

SHERBROOKE: ASCOT heard interesting talk on Hong Kong and Japan; held buttonhole contest with prizes; had tips on buying sheets. BELVIDERE were pleased to receive a card from Italy, from the mother of a child who had received a Christmas from Canada Stocking sent by the Branch; held paper drive; made socks for local welfare agency, donated to Cancer Fund; held word quiz. BROMPTON ROAD's special project was remodelling kitchen in Community Hall; held card party; enjoyed a maple sugar treat from Mrs. G. Westman; read a poem "The First Tuesday" from an Australian Institute paper. LENNOXVILLE held Jelly shower for Grace Christian Home for Senior Citizens; articles read on the following topics — measles and ill-effects, the Canadian Flag, the forming of the first Institutes here and abroad, the buying and care of upholstery, and the dandelion, lifeline of the bee. MILBY had Mrs. G. Shipway, School Nurse as guest speaker; sent gifts to family who lost their home by fire.

STANSTEAD: AYER'S CLIFF'S program was in charge of the grandmothers of the branch. They produced a series of skits (à la Jackie Gleason American Scene) about the busiest grandmother, the cutest, the best-sup-

porting, the one sponsoring a beautiful grandchild contest, and the grandmother of quintuplets. BEEBE held most successful rummage sale; catered to luncheon for the Stanstead Fish and Game Club. NORTH HATLEY held most successful card party with proceeds going to UNESCO Coupon #367. NORTH STANSTEAD held discussion of signs and how to display them for June Dairy Month; quiz contest on abbreviation of words. WAYS MILLS exchanged slips, seeds and bulbs, with timely hints on how best to care for them.

TWO MOUNTAINS: OKA greatly enjoyed being entertained by Argenteuil County at the latter's Annual Convention, and also the Joint Convention of Jacques Cartier and Vaudreuil Counties; Entertained Mrs. Ellard as guest speaker at their own Annual Meeting; discussion held on various plants, and on gardening methods; exchanged favourite plants for house and garden; joint bridal shower held for two members, Miss F. Gaspé and Miss Vivian Oke.

VAUDREUIL: HARWOOD heard talk on Nigeria by Mr. Edet Inwang, native of that country, who gave a description of the country, some of its customs and much general information; and answered questions of his most interested audience; took out membership in Vaudreuil-Soulanges Historical Society; sent donation to Hoodless Home; enjoyed Millinery Course with Miss McOuat with many attractive hats made.

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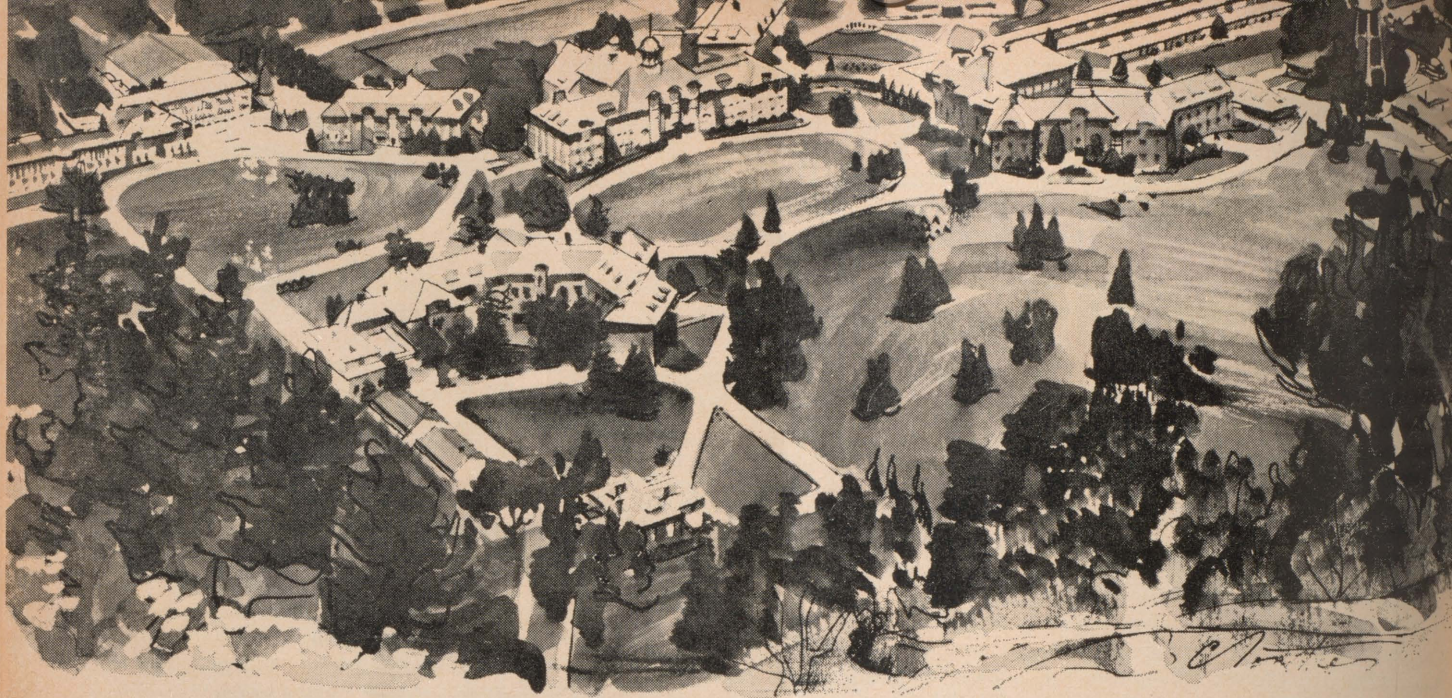


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COLLEGE PAGE

SUMMER CALENDAR

Prof. Grant, Dept. of Genetics recently returned from California where he spent one month collecting species of birdsfoot trefoil.

Prof. Morrison, Dept. of Entomology will attend the International Entomology meeting in London in August.

Prof. Klinck, Dept. of Agronomy will attend the Canadian Seed Growers Convention in Saskatoon.

Prof. Sackston, Dept. of Plant Pathology presented an invitation paper on "Diseases of Sunflowers" at the First International Sunflower Conference in Texas, June 17 and 18.

Prof. Warkentin, Dept. of Soil Science, will present a paper to the North-eastern Section of the American Society of Agronomy in July.

Prof. MacKenzie, Dept. of Soil Science, will attend the Northeast Forestry Soils Conference in Maine, August 9 to 11.

INDIANS STUDY LEADERSHIP

In most rural communities, there are people interested in Community Development. The Indian Communities in the Province of Quebec are no exception. Twenty-seven Indians from remote reservations in Quebec attended a course in community development at Macdonald College. This week-long course was held in mid-June.

Problems concerning the community were discussed. The formation of co-operatives and Credit Unions was also explained in some detail.

This was the first course of this type ever offered to the English-speaking

Indians here in Quebec. The course was sponsored by the Department of Indian Affairs, with the cooperation of the Department of Extension Macdonald College.

NEW BUILDINGS AT MAC

A new Soil Science building was completed in June and a large extension to Laird Hall will be finished by the end of this year.

The Soil Science building is now nestled between the Chemistry and the Main building. In the basement of this building, there are research and laboratory facilities. Also included is a constant environmental growth room. On the first floor there will be offices, drafting room and a seminar room. Upstairs is a lecture theatre, the largest on the campus, seating 304 students. This lecture room will be equipped with all the modern visual aids, including projection booths. This room will be used for large classes which are presently overcrowding other lecture rooms.

Laird Hall will have accommodations for 101 more women students when the new wing is finished later this year. Thirty-eight double and 25 single rooms are being added. The ground floor will be used for staff quarters and apartments. There will be a common room and an outside terrace on each of the identical second and third floors. The fourth floor will be slightly different with more single rooms; this is because it would normally be the attic but every bit of space is being used.

This new wing, which was included in the original plans in 1958, can be used as an independent building. This will be useful during the summer for conventions or other groups staying at the college. An elevator is being installed in the new wing for those who want to get to the fourth floor the easy way.

DOWN THE ROAD

Television reruns: starting, Friday June 12th at 7:30 to 8:00 p.m., on C.B.M.T., the C.B.C. are rebroadcasting the series "Down the Road". This series is presented by Macdonald College in cooperation with the C.B.C.

This seven-part series of half-hour programs deals with natural resources of Eastern Canada — soil, water, climate, crops, livestock and people.

Several members of the Macdonald College staff and several farmers from Quebec appear on these programs.

This is your second chance to view this series. We hope you enjoy it. This is the second television series offered by Macdonald College.

NEW A.I.C. PRESIDENT

Dr. Howard Steppler, Chairman of the Dept. of Agronomy at Macdonald College, has been elected President of the Agricultural Institute of Canada. Dr. Steppler has been Chairman of Macdonald College's Dept. of Agronomy since 1955. Prior to this, he served in the department as assistant and associate professor of Agronomy. Dr. Steppler has had a long association with the A.I.C., having served as a director of the national organization and as president-elect during the past year.

MACDONALD COLLEGE STAFF ACTIVE IN A.I.C.

Several members of the staff of Macdonald College took part in the Agricultural Institute of Canada Convention in Fredericton, N.B., June 22 to 25. At this convention, papers were presented by people from across Canada on a wide variety of agricultural topics.

The following papers were presented by members of the staff from Macdonald College: Prof. L. Lloyd, Chairman of the Department of Animal Science, "Nutrition, as it applies to Canada's Livestock Industry in This Time of Change"; Prof. R. Brawn, Department of Agronomy, "Corn, Present and Future Status in Canada"; Prof. J. Bubar, Department of Agronomy, "Analysis of Genetic and Environmental Variances applied to Re selection within Drummond Timothy"; Prof. B. Warkentin, Chairman of the Department of Soil Science, and R. Laventure presented his thesis, "Soluble Constituents of Champlain Sea Sediments".

Prof. A. MacKenzie, Department of Soil Science, and D. Cotton presented parts of Mr. Cotton's thesis, "Nutrient Content of Red Pine as Influenced by Sampling Location and Fertilizer Treatment"; Prof. R. Broughton, Department of Agricultural Engineering, presented a paper written by L. Campbell of Trinidad on "Soil and Water Conservation. Problems in the Eastern Caribbean"; Prof. W. Sackston, Chairman of the Department of Plant Pathology, and P. Gossen presented Mr. Gossen's thesis, "Biology of *Plasmopora Halstedii* on Sunflower"; Prof. W. Sackston and A. Devaux presented Mr. Devaux's thesis, "Verticillium Wilt of Horticultural Crops in Quebec"; Prof. R. Estey, Department of Plant Pathology and K. Lobo presented Mr. Lobo's thesis, "Factors effecting Nematode Control by *Nemapagous* Hyphomycetes".

Prof. W. Sackston acted as discussion leader at the symposium entitled, "The Status of Plant Pathology and Mycology in Canadian Universities".

INSTITUTE OF EDUCATION CONVOCATION

Three hundred and fifty-six students received their teaching Diplomas. One hundred and sixty-nine obtained their Temporary Permits at the convocation on June 1st at Macdonald College. Dr. H. D. Woods, Dean of the Faculty of Arts & Science of McGill was the guest speaker.

Class I diplomas were given to 131. A class I diploma is awarded to students who have an undergraduate degree from an approved university and successfully complete one year's teaching training at Macdonald College.

Class II diplomas were awarded to 225 students. This diploma requires a Grade Eleven graduation and two years at this College, or Grade Twelve and one year.

Those obtaining a Temporary Permit have completed Grade Eleven and one year's teaching training in the Institute of Education.

The Hon. Jacob Nicol Prize for General Proficiency in the Temporary Permit Division was won by Mrs. Donna Wing.

The "Director of Protestant Education Prize" for General Proficiency for the one-year Class II Certificate was awarded to Brian Silcoff. The "Canon Scott Chapter, Imperial Order Daughters of the Empire, Montreal Prize" for General Proficiency, Second Year Diploma, was presented to Miss Pamela Steele.

Mrs. Margaret Dow, received the "Ethel Walkem Joseph Prize in Education," donated by the Imperial Order of the Daughters of the Empire, Wolfe, & Montcalm Chapter, for obtaining the highest aggregate in the Class I Diploma.

B. Sc. GRADUATES

Forty students received their degrees in Agriculture, and twenty-three re-

ceived degrees in Home Economics at the McGill Convocation on May 29. These students came from many lands — Trinidad, Jamaica, Nigeria and Holland, to name only a few.

In the School of Household Science, Miss Alison Davidson of Lachine, Que., received the Governor-General's Medal for the highest marks in the Graduating Class for the 3rd and 4th years combined.

Miss Elaine Hill of St. Laurent, Que., received the Harrison Memorial Prize for obtaining the highest marks during the 4th year.

In the Faculty of Agriculture, Poo-van Manmohansingh of Trinidad, West Indies, received the Governor General's Metal for obtaining the highest mark in the Graduating Class. Melvin Barclay of Tobique River, New Brunswick, received the Stern Cup for the highest aggregate in two animal production courses. Ronald Baynes from Antigua, West Indies, received the Cutler Shield for the highest aggregate in 4th year, and the Robert Raynauld second prize for second highest standing in the Agronomy option. Hubert Landstra from the Netherlands received the Robert Raynauld first prize for the highest standing in the Agronomy option.

A THREE GENERATION FAMILY ORCHARD . . .

Continued from page 10

Picking starts with Melbas about the middle of August, followed by Lobos at the end of the month. MacIntosh are ready for spot picking by September 15, and the season ends with Cortland and Spies in October.

As far as it is possible, the Stevensons have mechanized their operation. One tractor is equipped with a fork-lift to handle 20-bushel pallet boxes. A tractor-trailer is used to haul to the co-op. The pruning shears are operated by compressed air. Two mist sprayers, a flail mower, wagons and four tractors add to the inventory.

Pruning is a major job. It's done "whenever the shears are in your hand", Floyd will tell you. They try to get over the orchard every year. If an orchard is in good shape, he believes a man should prune an acre in a day. But he finds they will often need to spend twenty-five minutes on a tree.

The grass in the orchards is clipped three or four times a year and left on the ground for mulch. Fertilizer (2-10-20) was used this spring for the first time in several years. They found that the old standard, 9-5-7, was giving a nitrogen imbalance on their potash-short soils. Leaf analysis has shown that boron and magnesium may, at times, be short.

Although not a record, last year was a very good season; they sold 24,000 bushels from the 70 acres. And 75% graded "Fancy". Bill feels that good spraying, pruning and careful picking are the key factors in quality. Over the years, prices have ranged between 40 cents for juice apples and \$1.50 for Fancy. All are marketed through the 35-member Franklin Centre Co-op.

But, of course, that is by no means all profit. Spray material alone cost \$3,200 last year. That's 13 cents out of each bushel. And picking at 20 cents to 25 cents a bushel added up to another \$4,500, not counting regular wages. To that must be added all the other fixed and operating costs.

It is hard to determine the capital value of an orchard; very few good ones ever change hands. Bill estimates it must be close to \$25 per tree. The nursery stock costs 90 cents to \$1.25, and there are 45 trees per acre, planted 30 by 30. Then there is the long wait, ten years or more to the first crop, 25 years before the tree is in full bearing.

Apple growing is not an "in and out" game. It requires the kind of planning that spans generations. And the Stevensons — grandfather, father and son — show they have the foresight, the patience, the skill and the energy that have built success.

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been known to
carry away a
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A baboon may
beat his mate to
death—for
accepting the
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another!



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that the ostrich
can kick harder
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grown horse?



The duckbill platypus has a
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not associate with
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of all animals!



But his "cousin" the
grizzly will attack
any living thing
in its path!

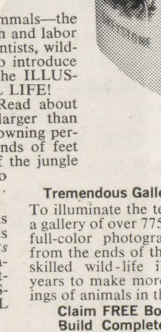
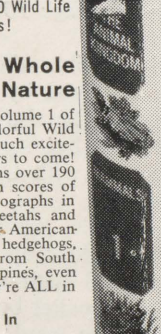


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